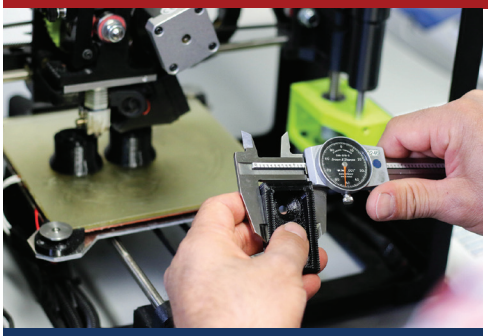


NEVADA NATIONAL NNSS SECURITY SITE

Global Security

Special Technologies Laboratory

Background

The Special Technologies Laboratory (STL) specializes in the focused development of specialized devices, measurement instruments and analysis methods tailored to the needs of the user. The laboratory staff is skilled in conducting complex experiments for field deployment or laboratory application of measurement and analysis tools, as well as deployment of resources and technology to support global field requirements of the U.S. government.

The STL's scientists and engineers take complex ideas through the design, development and prototyping stages to provide sophisticated yet easy to use technical solutions in short periods of time. User friendliness, maintainability, reliability and low operations costs are other distinctive characteristics of the laboratory's work.

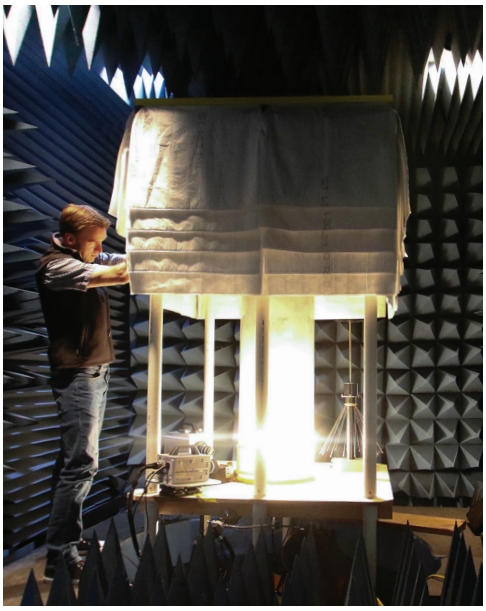
History

Located in Santa Barbara, California, the Special Technologies Laboratory (STL) has been part of the Nevada National Security Site (NNSS) since 1959. For the past six decades, STL personnel have contributed to testing at the NNSS, stockpile stewardship, nonproliferation and work for other government agencies.

The STL was created by Edgerton, Germeshause, and Grier, Inc. as Santa Barbara Operations (SBO) in Goleta, California. Its location placed it amid a growing electronic and defense industry with ample access to the University of California, an airport, the military facilities of Vandenberg Air Force Base and what is now known as Naval Base Ventura County.

From 1959 to 1995, SBO focused on national security challenges, supporting the Weapons Test Program, accelerator development and operations, research and development (R&D) nuclear detection technology, aerial measurement systems, Navy Nuclear Intelligence and barrier penetration radar technology. The team at SBO developed a world-class linear accelerator, calibrating detectors and determining yield during underground testing. They also developed a long line of radiation detectors supporting work at the NNSS and around the world.

SBO built a reputation for developing and providing rapid technical solutions to emerging problems and for supporting government organizations beyond the Department of Energy (DOE). In 1986, STL was established off the foundation of SBO to accelerate the development of the nonproliferation technology that had been developed at SBO and to

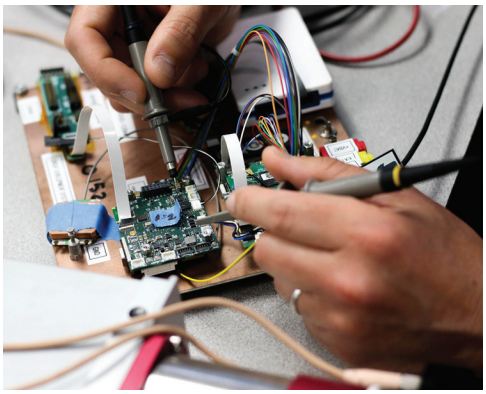


support the wider defense community in partnership with DOE and National Nuclear Security Administration (NNSA). STL continues to support the NNSS by partnering with NNSA and DOE laboratories, specifically supporting NA-10, NA-22, DOE AU and various NNSS Strategic Partnership Project sponsors.

The Nonproliferation Research team at the STL has a rich history of work at the NNSS supporting diagnostics development testing and ground truth assessments. Important contributions this team make are on baseline and data collection capabilities. Partnering laboratories often understand what they want to collect but do not have the

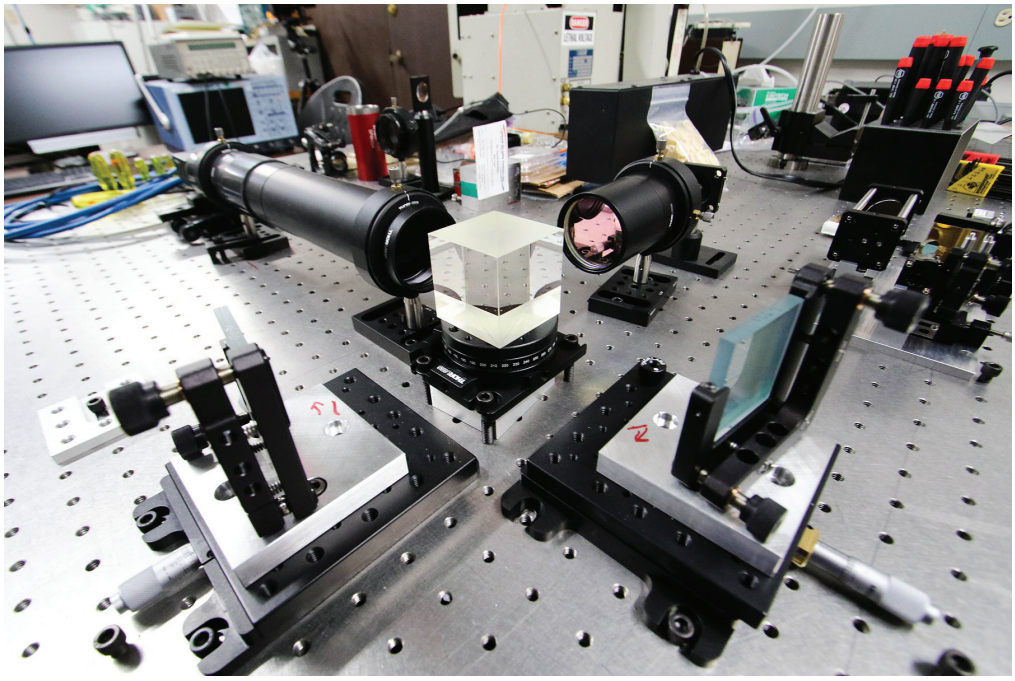
capability to set up that collection and understand what the baseline looks like. The Nonproliferation Research team at the STL ensures successful measurements by designing and instrumenting experiments. They frequently conduct scaled-down experiments to provide proof of concept to an experimental design before it is carried out in full scale at the NNSS.

STL teams actively collaborate with scientists at national laboratories, leading to diagnostic and technique developments directly impacting NNSS experiments. Since 2000, the STL Experimental Physics team has executed more than 1,500 shock physics experiments and has co-authored dozens of joint publications with national labs.



Key Developments:

- Photon Doppler Velocimetry
- Modular Photon Doppler Velocimetry
- Broadband Laser Ranging
- MSTS Quiet Catch Cyber program



National Nuclear Security Administration

For more information, visit:

www.nnss.gov

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